

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 30 (Cancelled)

31. (Currently Amended) A method ~~for operating a laser having a gain medium,~~ comprising:

exciting a gain medium having an active region to generate an optical beam along an optical path;

(~~deviating a nominal operating~~ setting of an optical element positioned in the optical path of a cavity of the laser to induce a voltage change across the active region of the gain medium;

sensing the voltage change across the active region of the gain medium induced in response to the deviating; ~~and~~

generating an error signal in response to the sensed voltage change; and

adjusting the nominal operating setting of the optical element in response to the sensed voltage change error signal to tune the optical element.

32. (Previously Presented) The method of claim 31 wherein the gain medium comprises a semiconductor gain medium.

(33.) (Previously Presented) The method of claim 32 wherein deviating the nominal operating setting of the optical element includes dithering the nominal operating setting.

34. (Previously Presented) The method of claim 32 wherein deviating the nominal operating setting of the optical element includes deviating a nominal operating position of the optical element.

35. (Previously Presented) The method of claim 32 wherein deviating the nominal operating setting of the optical element includes deviating a nominal index of refraction of the optical element.

36. (Previously Presented) The method of claim 32 wherein deviating the nominal operating setting of the optical element includes deviating a nominal voltage applied to the optical element.

37. (Previously Presented) The method of claim 32 wherein deviating the nominal operating setting of the optical element includes deviating a nominal temperature of the optical element.

38. (Previously Presented) The method of claim 32 wherein the optical element is one of an end mirror of the cavity, a grid generator, and a channel selector.

39. (Previously Presented) The method of claim 32 wherein adjusting the nominal operating setting includes adjusting the nominal operating to reduce a voltage sensed across the gain medium.

40. (Previously Presented) The method of claim 31, further comprising:
deviating a plurality of nominal operating settings of a corresponding plurality of optical elements of the cavity to induce the voltage change across the gain medium; and
adjusting the plurality of nominal operating settings of the corresponding plurality of optical elements in response to the sensed voltage to tune the plurality of optical elements.

41. (Previously Presented) The method of claim 40 wherein the plurality of nominal operating settings are deviated and adjusted sequentially.

42. (Previously Presented) The method of claim 40 wherein the plurality of nominal operating settings are deviated and adjusted simultaneously.

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43. (Currently Amended) A laser apparatus, comprising:
a gain medium having an active region to emit an optical beam along an optical path;
a first and second reflectors positioned in the optical path and defining a laser cavity;
a voltage sensor operatively coupled to the gain medium to monitor voltage across the ~~gain medium~~active region; and
a control system operatively coupled to the voltage sensor and to an optical element positioned in the optical path, the control system to deviate a nominal operating setting of the optical element to induce a voltage change across the gain medium and to adjust the nominal operating setting in response to the voltage change to tune the optical element.

44. (Previously Presented) The laser apparatus of claim 43 wherein the control system further to dither the nominal operating setting to induce a modulated voltage across the gain medium and to adjust the nominal operating setting in response to the modulated voltage to tune the optical element.

45. (Previously Presented) The laser apparatus of claim 44 wherein the control system comprises:

a dither element to dither the nominal operating setting of the optical element;
and
an adjustment element to adjust the nominal operating setting of the optical element.

46. (Previously Presented) The laser apparatus of claim 44, further comprising:
a plurality of optical elements positioned in the optical path having a corresponding plurality of nominal operating settings, the control system operatively coupled to each of the plurality of optical elements to deviate the corresponding plurality of nominal operating settings to induce the voltage change across the gain medium and

to adjust the plurality of nominal operating settings in response to the voltage change to tune the plurality of optical elements.

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47. (Currently Amended) The laser apparatus of claim 46 wherein the control system to deviate and to adjust the plurality of nominal operating settings sequentially.

48. (Currently Amended) The laser apparatus of claim 46 wherein the control system to deviate and to adjust the plurality of nominal operating settings simultaneously.

49. (Currently Amended) The laser apparatus of claim 43 wherein the optical element comprises the first reflector.

50. (Previously Presented) The laser apparatus of claim 43 wherein the optical element comprises one of a grid generator, a channel selector, and an electro-optic tuning element.

51. (Previously Presented) The laser apparatus of claim 43 wherein the nominal operating setting includes one of a nominal operating position of the optical element, a nominal voltage applied to the optical element, and a nominal temperature of the optical element.

52. (Currently Amended) A laser apparatus, comprising:
means for emitting an optical beam along an optical path;
means for defining a laser cavity along the optical path;
means for producing a loss characteristic, the means for producing the loss characteristic positioned in the optical path;
means for deviating the loss characteristic from a nominal operating setting to induce a voltage change across the means for emitting the optical beam;
means for sensing ~~[[a]]~~the voltage change across the means for emitting the optical beam; and

means for adjusting the means for producing the loss characteristic in response to the voltage change.

53. (Previously Presented) The laser apparatus of claim 52 wherein the means for defining a laser cavity comprises the means for producing a loss characteristic.

54. (Currently Amended) The laser apparatus of claim 52, ~~further comprising~~ wherein the means for deviating the loss characteristic comprises a means for dithering the means for producing the loss characteristic.

55. (New) The laser apparatus of claim 43 wherein the second reflector comprises a partially reflective facet formed on the gain medium.
